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Lumber Prices

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PRICE CYCLES

THE studies made of lumber prices of past decades have not been sufficiently exhaustive to enable one to trace the exact history of the movement.¹ However, the studies that have been made are very suggestive, since they indicate that relative lumber prices move in cycles. Two of these cycles have been noted in the past, namely, between 1860 and 1880, and again from 1880 to 1916. Present evidence points to the beginning of a third similar cycle.

These cycles are characterized, during their early years, by an increasing divergence in the relative lumber price level from that of the "all commodities" group, followed during the later years of the period by a decline in the rate of increase of the lumber price line, the latter gradually approaching the "all commodities" group level at the end of the cycle.

SHIFTING CENTERS OF LUMBER PRODUCTION

The beginning of the divergence in the rate of increase between the two groups, in each cycle, is nearly coincident with the shifting of the center of lumber production from one section of the country to a more distant one.

Production in Northeastern States.—

¹ Some difficulties present themselves in the study of early lumber prices because of the fragmentary character of the price records and because of the many changes in grade designations which took place previous to the past two decades.

The relatively rapid increase in lumber prices as compared to the "all commodity" group came at a time when lumbering was losing its local character and becoming a national industry. The centers of production of the Northeastern States failed to meet the new demands made upon them and the lumber industry, in the course of its expansion, began to move to more distant interior points in New England, New York, Pennsylvania and the pineries of the Lake States. With this shift in the producing centers there came also a westward movement of the center of population.

Although there was an abundance of raw material in the country, the supply near the markets was less abundant. The length of haul to market having increased, transportation costs became a more important factor in the delivered price of lumber and it was early reflected in a rather rapid rise in the relative price of lumber. This latter tendency was not so evident in the "all commodity" group since there was not a similar shift in the source of raw materials required in production.

Production in the Lake States.—From 1870 to 1880 there was a marked increase in the lumber producing capacity of the country, especially in the Lake States, and since the center of population was gradually moving westward there was a reduced haul to market for the lumber used by a greater per cent of the consuming public. On the other hand, the move-

ment of the center of population westward meant a shift away from the regions where many commodities, other than lumber, were manufactured, hence there was an increasing length of haul and greater transportation costs. The latter condition caused an increase in the delivered cost of many commodities and near the close of the cycle brought the relative values of the groups closer to each other than they had been at any time since the Civil War.

Production in the South and West.—Lumber prices about 1880 began to manifest the same tendencies that were evident during the early part of the first cycle. In the meantime the Lake States had become the center of lumber production and the center of population had shifted to Indiana, thus bringing about a new readjustment in the distribution of lumber. Although lumber manufacture was still at its height in the white pine region, there were indications that a relative lumber shortage was not far distant and operators were beginning to make investments in the West and also in the Southern pineries. The divergence in the relative prices of lumber and the "all commodity" group appears to have continued up to about 1907, following which time the rate of divergence decreased and more closely followed the general trend during the period from 1873 to 1880.

There is some evidence that we are entering upon a third cycle in the lumber price movement. The Bureau of Labor Statistics for the year 1919 shows that lumber and building materials advanced during the year 66.5 per cent; cloths and clothing 49.5 per cent; house-furnishing goods 48.5

per cent; food prices as a whole 22 per cent; fuel and lighting 8 per cent, and metal prices 3 per cent. Whether this heavy advance in building materials, including lumber, is the forerunner of a new cycle in the lumber price movement or merely an incident due to the disturbed building conditions as a result of the war cannot, as yet, be stated.

Recent Changes in Production Centers.—We are now passing through a change in the lumber industry similar to that which occurred shortly after the Civil War and after 1880, namely, the shifting of the center of maximum production from one region, the Southern pineries, to the forests of other regions, the Inland Empire and the far West. It is reasonable to suppose that the transplanting of the center of maximum production from the South to the West, 2,000 miles distant, without a similar transfer of the center of population, will again bring about a greater relative increase in the value of the "lumber" group as compared with the "all commodity" group.

CHARACTERISTICS OF PRICE MOVEMENT

Prices Prior to 1913

The lumber price movement previous to 1913 displayed fluctuating tendencies, short periods of high prices being followed by comparatively long periods of low prices during which the returns to the industry were either low or negligible. The changes were more pronounced in general utility woods, such as Southern yellow pine and Douglas fir, and less apparent in specialty woods such as cypress, redwood and Eastern white pine.

One of the chief causes of the fluctua-

tion of lumber prices was the rapid and apparently unwarranted expansion of the lumber industry, which led to over capitalization and excess mill capacity, which in turn resulted in over production and exceedingly keen competition not only between the various producing regions but also between manufacturers within a given region.

Lumber prices began to rise rapidly about 1897, the demand for lumber being stimulated by the rapid industrial development of the country. An era of marked expansion of the lumber industry followed and buying of stumpage became so brisk that the price of raw material early reached a value which absorbed the greater part of the profit resulting from the higher prices of lumber.

The era of high prices for lumber culminated during the panic of 1907, and the rapid drop in value following this period led to many financial failures and to general demoralization in the industry. The demand for stumpage fell off and the chief means by which the majority of stumpage holders could secure sufficient funds to meet current expenses was to manufacture the stumpage into lumber and to sell it in the open market in competition with the products of other operators equally hard pressed.

The period following 1907, especially from 1908 to 1910, was marked by many failures in the lumber industry especially in the Northwest. By 1911 the lumber business had become more profitable. In 1912 there was a marked improvement in lumber demand and in lumber prices fostered by improved business conditions, an increase in building, increased railroad earnings and favorable crops.

Prices, 1913-1920

1913.—Although the trade at the opening of the year 1913 looked favorable, prices began to decline in April and competition among manufacturers was very keen. During the last four months of the year lumber prices were unsatisfactory, those for general building woods, such as Southern yellow pine, approached the price level prevailing in 1908 following the panic.

1914.—Values continued to fall during 1914 because of the subnormal building activities and the relatively meagre purchases made by the railroads. The opening of the European war in August soon reduced lumber exports to a minimum and brought about a hesitant attitude in buyers in this country, who limited their purchases to immediate needs only. In spite of curtailed production stocks of lumber accumulated at the mills throughout the year, since curtailment did not keep pace with the decreased demand. It was not until the middle of the following year that the stocks on hand began to diminish to an appreciable extent.

1915.—During the first three quarters of 1915, lumber prices remained at approximately the same level as those current during the latter part of 1914. Toward the close of the year the price level took an upward turn due to the large amount of industrial construction, the revival of railroad purchases of lumber on a rather large scale, purchases of retail yard, planing mill and wood-using factories made in anticipation of a heavy spring trade, and to a car shortage which created a lumber scarcity in some sections. Production was greatly stimulated by

this revival in demand, since operators were desirous of recovering their losses of the previous two years.

1916.—Stocks of lumber carried over into 1916 were not abnormal but there was a tendency on the part of buyers to withhold purchases in the hope of a return to the low quotations of 1915. This attitude on the part of the buyers led to price concessions, especially on general building woods, which was reflected in a price decline for many grades during the first two quarters of the year. This took place in spite of an acute car shortage which started during February and which later in the year proved to be one of the greatest transportation handicaps that the industry had experienced. Normally, a car shortage tends to raise prices by bringing about a relative scarcity of lumber in the large consuming regions. However, production so far exceeded the amount of lumber moved, that stocks rapidly accumulated and, in order to finance the operations, sales were made at a lower price than would ordinarily be justified. An increased demand for lumber and a continuance of the transportation handicap led to a rise in price late in the year.

1917.—In the second quarter of 1917 a marked advance came. This advance was due chiefly to the heavy demands of the United States government for military purposes, to the industrial activity in manufacturing centers due also to the war, and to the great prosperity which had come to the agricultural sections through the high prices which they received for their crops.

The chief feature of the market during the last nine months of the year were the government purchases

since the general building program of the country was subordinated to military requirements, and labor and money for speculative building could not be secured easily.

Prices during the last half of the year were held to a comparatively uniform advance by a voluntary price agreement entered into in June, between the Southern pine operators and the Council of National Defense, for such lumber as the United States government required for military cantonment purposes. This agreement did much to steady the price of general building woods, since Southern pine represents such a large per cent of the lumber output of the country. The importance of this wood in the military program during 1917 and 1918 is shown by the fact that 3,500,000,000 board feet of Southern pine lumber was absorbed for government purposes during a period of eighteen months.

The characteristic features of the 1917 lumber trade were the abnormal government demand, greatly reduced commercial business not related to the military program, transportation handicaps for the movement of commercial sales, and a voluntary price agreement between the producers and the various governmental purchasing agencies.

1918.—Commercial prices advanced rapidly during the early months of 1918 for such consignments as could be moved. This was due chiefly to a desire on the part of buyers to stock up previous to the 25 per cent advance in freight rates which was to go into effect on June 25, to the rapidly rising costs of production which pointed towards higher prices later in the year, and to the fear that with reduced production and increasing government

demands, the commercial buyers, in order to make certain even of their minimum requirements at a satisfactory price, must secure their stocks at an early date.

Governmental Price Fixing

The rapidly widening gap between governmental and commercial prices for lumber soon forced the conclusion that it would be impossible for the government to continue to purchase lumber in reasonable quantities unless some measures were adopted to put both governmental and commercial quotations on a parity.

The price fixing committee of the War Industries Board therefore fixed a maximum price at which certain kinds of lumber could be sold both to public and commercial agencies. The prices were first fixed for Southern yellow pine and Douglas fir in March, followed by Eastern spruce in April, and Pennsylvania hemlock in August. Special agreements were made also with regard to some other woods. No attempt was made to fix the price of hardwoods, although informal agreements were made with producers regarding certain items such as mahogany lumber and birch logs which were in demand for special military purposes. All of the price restrictions were removed by the end of the year.

Conservation measures were enforced in many wood-using industries, during the latter part of the year because of the necessity of diverting their labor, supplies and transportation to direct or indirect military purposes. These measures greatly curtailed the use of lumber for all but essential purposes. The result was a heavy decline in lumber production and a

consequent decrease in stocks on hand at the mills, since the movement of lumber was in excess of production.

During the last quarter of 1918 the lumber price index showed a decline of 3 points.² Southern yellow pine, however, rose 1 point and Eastern hemlock and Eastern spruce remained stationary.

This check in the rise of prices was due, in the case of hardwoods, to the abrupt cessation of lumber purchases by the government and to the inability of the commercial market to immediately absorb its normal amount of material. The industries using hardwoods, in many cases, specialized on war requirements and had large quantities of material on hand which had to be utilized before making new purchases. The uncertainty as to the trend of business during the next few months also caused a reduced demand.

The stock of general purpose lumber in the hands of dealers in this country was at a very low point, however, and the immediate requirements for lumber for repairs was sufficient to hold the market rather firm for construction woods. The Douglas fir decline may be attributed to the great uncertainty which existed in the minds of western operators as to the course future events would take. The movement of their product was hampered also by transportation conditions.

Prices in 1919

The first six months of 1919 was a period of more or less uncertainty in the lumber market. The lumber trade was unduly disturbed over what dis-

²Based upon the lumber price index in *Prices of Lumber*, by R. C. Bryant, War Industries Board Price Bulletin No. 43, Washington, 1919.

position was to be made of the several hundred million feet of lumber which the government had on hand at the signing of the armistice. Producers also were greatly concerned over the possible trend of business in this country and abroad. Many diverse opinions existed as to the volume of lumber that would be absorbed, the prices which it would bring and the probable trend of costs. Labor conditions in the industry were unsettled, a marked labor shortage existing, with constant pressure being applied for a wage increase.

Southern Yellow Pine.—In spite of these handicaps and the general business uncertainty of the country the index number of Southern yellow pine rose from 185 in the fourth quarter of 1918 to 200 during the first quarter of 1919. This increase was due to the very low stocks held at the mills, the small production of the mills and the relatively active demand for Southern yellow pine for general industrial purposes.

Most hardwoods suffered a decline during the first quarter of 1919 because wood-using industries had not yet returned to a normal basis and the export trade had not developed to any marked extent.

The start, about mid-year, of the building program to meet the housing shortage led to a brisk demand for general building lumber and prices for all items of stock began to advance very rapidly. This was reflected in prices of Southern yellow pine, whose index number during the second quarter was 216, during the third quarter 285, and during the fourth quarter 329, the total advance during the year being 144 points. The advance during

the year was greater than any which has occurred during a like period in the history of Southern pine and represents 21 per cent of the entire price advance made during the years 1913 to 1919 inclusive. Similar, but less pronounced advances also took place in other general building woods.

Eastern White Pine.—In 1919, the Eastern white pine index number was 163 during the first quarter, 167 during the second, 201 during the third, and 203 during the fourth. Of the total advance of 38 in the relative price of the above wood, 92 per cent came during the third quarter. Eastern white pine dropped 2 points from the last quarter of 1918 to the first quarter of 1919, a slight reduction occurring in all grades. This was due to the slackening of the box trade and other special uses for which white pine is used.

Eastern Spruce and Hemlock.—Eastern hemlock showed an advance of 85 points during the year. Eastern spruce dropped from 184 in the last quarter of 1918 to 173 during the first quarter of 1919, following which it rose to 204 during the third quarter, falling to 202 in the fourth quarter. Of the four softwoods considered in this study, spruce is the only one which showed a decline during the fourth quarter. This was due to the light demand for certain items, especially in "random" and "boards," which led to a drop in price in these items during October and November. The loss in value was largely regained during December. The chief reason for the decline in demand appears to have been that builders exhibited a tendency to hold back on building operations because of the increasing costs of

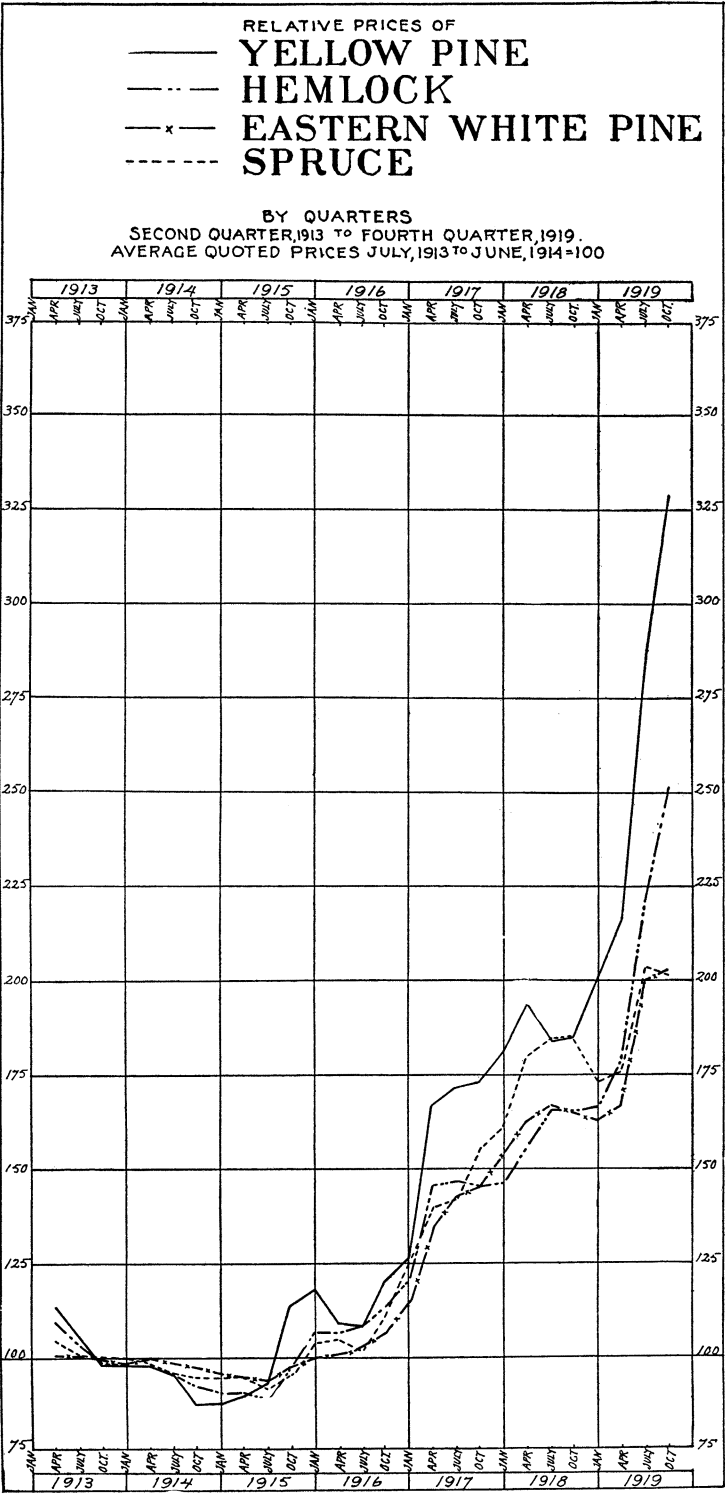


Fig. 1.—Weighted Index Numbers of Prices.—Southern Yellow Pine, Hemlock, Eastern White Pine, and Eastern Spruce. By quarters, second quarter, 1913, to fourth quarter, 1919. (Average quoted prices, July, 1913, to June, 1914=100.)

labor and materials. Producers facing a dull market began to make price concessions to move stock. By December a new attitude towards building was assumed by contractors, who again entered the market. This action of the contractors combined with a shortage of lumber due to inadequate transportation, again caused a stiffening of prices. There was but little weakening of the market in "Frames" during the last quarter.

Hardwoods.—Hardwoods showed a marked increase during 1919. The price level of plain oak, hard maple, gum, birch, ash, and hickory, however, dropped during the first quarter of 1919 as compared to the last quarter of 1918, because of the uncertainty which existed in the wood-using industries regarding probable demand for their products during the year. By the second quarter the trend of business was more clearly foreseen and prices for all species began to rise.

A very rapid increase in values occurred during the last two quarters, because unfavorable operating conditions had kept production at a point below demand, stocks at mills were rapidly becoming depleted, and the demand for hardwoods by wood-using industries, which were again on a favorable operating basis, was becoming very strong. The prices offered by hardwood buyers were in excess of any previously paid for the same class of material. The most rapid advance in many hardwoods came during the last quarter of the year, when competitive buying by furniture, vehicle, automobile and similar industries raised prices to an unheard of level.

Gum.—Among those species the prices of which were studied, gum

showed the greatest relative advance during the year, the index number rising from 185 during the last quarter of 1918 to 355 during the last quarter of 1919. Of this advance of 170 points, 56.5 per cent took place during the third quarter of the year, in contrast to most other hardwoods, and 27 per cent during the last quarter. Gum, up to a few years ago, was regarded as one of our "cheap" woods, but the value of the lower grades for box material and the upper grades for furniture and other decorative purposes has raised its price level to a high point.

Ash.—The index number for ash advanced from 172 to 285 during the year, 58 per cent of this increase occurring during the last quarter, and 22 per cent during the third quarter. The chief factor in the advance in the price of this species has been the abnormal demand for this wood by the vehicle and other allied industries.

Birch.—Birch advanced from 158 to 221 from the fourth quarter of 1918 through the fourth quarter of 1919, but due to a decline in the first quarter of 1919, the actual increase for the last three quarters of 1919 was 82 points, 80 per cent of which occurred during the last quarter.

Poplar.—Yellow poplar was one of the two hardwoods included in this study which did not show a decline during the first quarter of the year. The maximum rise came during the last quarter of the year which represented 44 per cent of the 1919 price advance. The rise during the third quarter was 36.5 per cent of that for the year.

Chestnut.—Chestnut showed a slight advance during the early months of

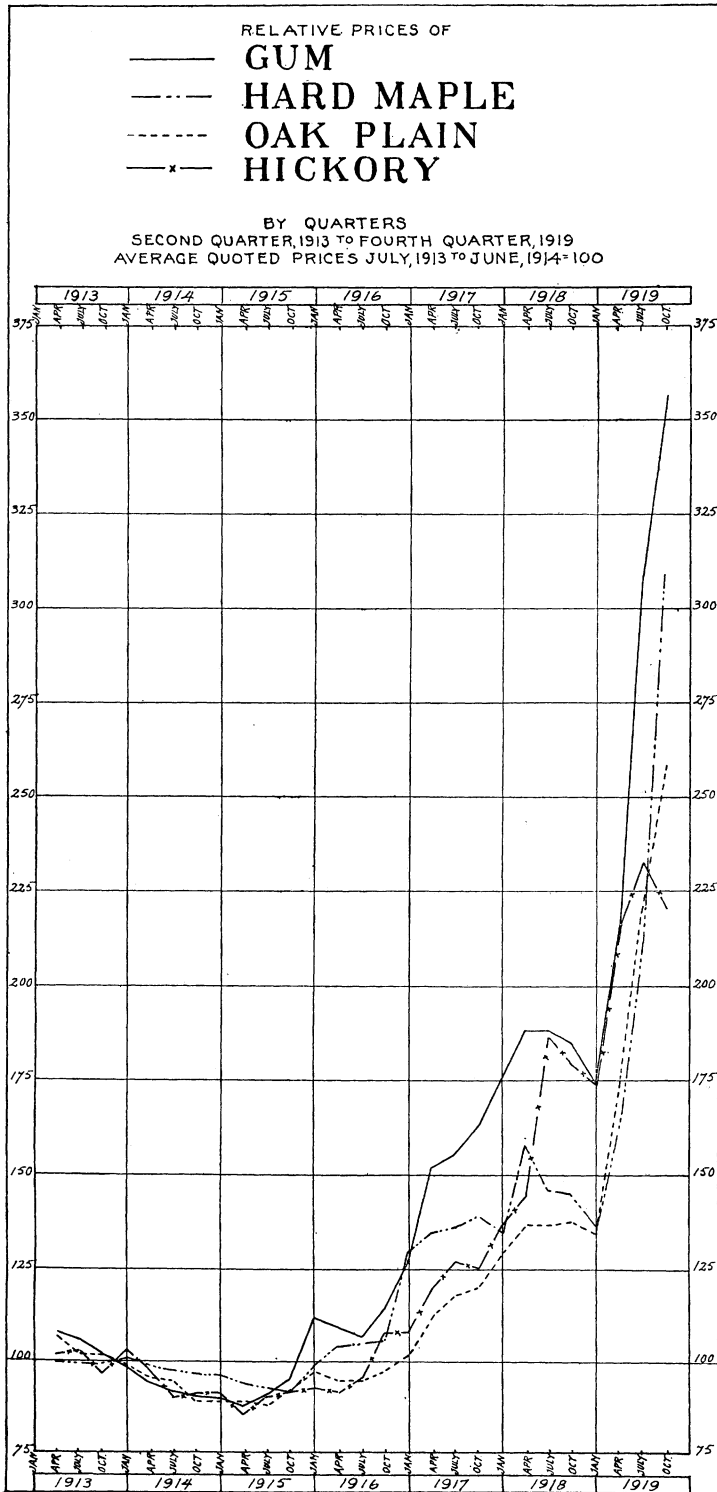


FIG. 2.—Weighted Index Numbers of Prices.—Gum, Hard Maple, Oak, Plain, and Hickory. By quarters, second quarter, 1913, to fourth quarter, 1919. (Average quoted prices, July, 1913, to June, 1914 = 100.)

the year, but during the third quarter it rose 34 points above the second quarter, and during the fourth quarter 28 points above the preceding one.

Hickory.—Prices of hickory declined slightly during the first quarter but rose rapidly during the second and third quarters. In the latter period they were 30 per cent above the last quarter of 1918. The decline during the fourth quarter of 1919 may be attributed to the fact that only two grades of common lumber were available for study and that the demand for the low grades fell off during the latter part of the year. Had prices of the best grades been available the index number for hickory would not have showed this marked decline.

The maximum 1919 lumber price advances, as indicated by the data used, came in the third quarter for all species except yellow poplar and birch, which showed a higher increase during the fourth quarter. Among softwoods the only decline noted at the end of the year was in spruce, and among hardwoods, in hickory.

During the year 1919 the twelve woods forming the basis for this study showed the following per cents increase in relative price: Hard maple 114; gum 92; oak, plain, 87; Southern yellow pine 77; ash 65; hickory 60; yellow poplar 58; chestnut 53; Eastern hemlock 50; birch 40; Eastern white pine 23; and spruce 10. It is, therefore, evident that the maximum relative rise in price was in specialty hardwoods, while the rise in the price of softwoods came in general building woods, with the exception of spruce, which showed the lowest per cent rise during the year. This was due to the average base price of spruce being 60

per cent higher than that for Southern yellow pine and also to the fact that actual advances in the price of spruce were much less because the better grades of Southern yellow pine are adapted for more highly specialized uses in building construction than any of the grades of spruce.

The index numbers for the species mentioned for the years 1918 and 1919 inclusive are shown in Table I, and also graphically for the years 1913 to 1919, inclusive, by Figures 1, 2 and 3.

Lumber Prices Compared with "All Commodities"

The Bureau of Labor Statistics monthly index for "all commodities" and for "lumber and building materials" shows that from December, 1918, to January, 1920, the increase in relative prices was 20.4 per cent for the first group and 63.5 per cent for the second. In only one of the species of lumber mentioned, namely spruce, was the increase below that for the "all commodities" group. Five species showed a greater advance in relative price than the "lumber and building materials groups." Time has not permitted the calculation of the 1918 index number for the species discussed in this article so that the actual increase in the "lumber" group cannot be given. The 1919 index number for the twelve species, discussed in this article, shows an increase of 30 per cent over the 1918 index number for the same twelve species and for Douglas fir. Were it possible to include Douglas fir in the 1919 index, the per cent of increase would undoubtedly be somewhat higher. It is evident, however, that the "lumber" group values have risen at a rate

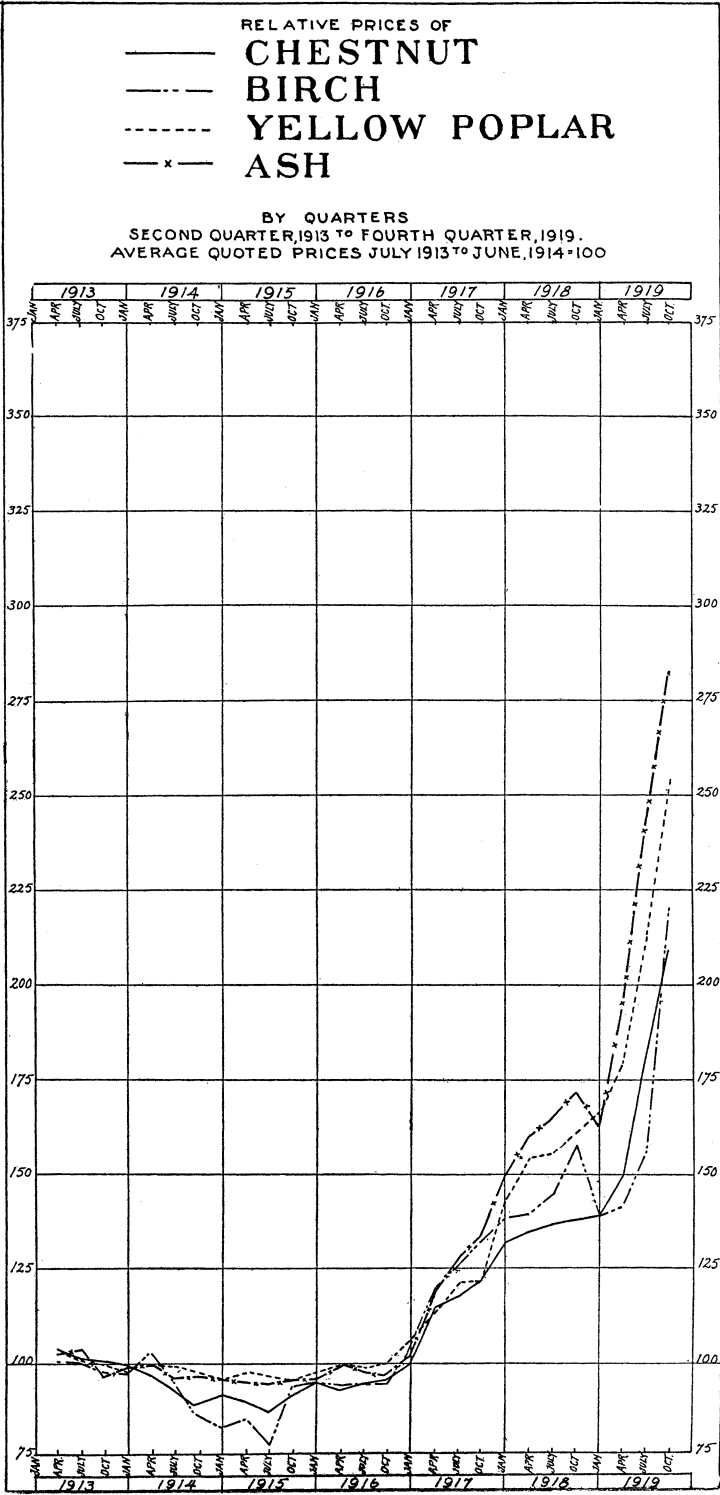


Fig. 3.—Weighted Index Numbers of Prices.—Chestnut, Birch, Yellow Poplar and Ash. By quarters, second quarter, 1913, to fourth quarter, 1919. (Average quoted prices, July, 1913, to June, 1914=100.)

at least 50 per cent higher than those for the "all commodity" group. It is not anticipated that this rate of increase will continue long, because further marked advances in lumber prices are doubtful. It is not a matter of surprise, however, that such a rise should have occurred, since for many years lumber was sold on a narrow margin of profit and did not share to the same degree in the advances made by some other groups. For example, the Bureau of Labor Statistics show that from January, 1913, to January, 1919, the "all commodity" group values rose 103 per cent, while that for lumber rose only 67 per cent, and for "lumber and other building materials" 61 per cent.

From the standpoint of national welfare the raising of the lumber price level to a plane more nearly equal to the "all commodities" group may be regarded with favor, since prices in former years have been too low to encourage timber land owners to engage in the production of timber for our future needs. With the present price level, it now becomes practicable to urge the growing of timber crops since the returns promise to be such as to insure a reasonable profit on the investment.

Dangers of Rapid Price Increases

That the rapid price increase during the last year carried with it an element of danger to lumber producers cannot

TABLE I.—INDEX NUMBERS OF LUMBER PRICES FOR THE YEARS AND QUARTERS, 1918–1919 *

	All species	Southern yellow pine	Eastern white pine	Eastern hemlock	Spruce	Oak, plain	Hard maple	Gum	Chestnut	Birch	Yellow poplar	Ash	Hickory
Year 1918.....		186	162	159	177	138	146	184	136	145	154	162	162
1919.....	223	258	182	205	190	196	200	263	170	165	203	215	211
Quarters 1918													
First.....		182	154	147	161	129	135	175	133	139	143	150	132
Second.....		194	163	156	180	137	158	188	135	140	154	160	144
Third.....		184	167	166	184	137	146	188	137	145	156	165	192
Fourth.....		185	165	166	184	138	145	185	138	158	161	172	179
Quarters 1919													
First.....	175	200	163	167	173	135	137	175	139	139	167	162	174
Second.....	193	216	167	178	176	170	161	213	149	142	179	194	215
Third.....	244	285	201	223	204	222	208	309	183	157	213	219	233
Fourth.....	282	329	203	251	202	258	310	355	211	221	254	285	282

* The Index numbers for the year 1918 are taken from *Prices of Lumber* by R. C. Bryant, War Industries Price Bulletin No. 43, Washington, 1919. It was not practicable to secure data on Douglas fir prices, which appear in the above mentioned bulletin; hence a series of index numbers for this species are not included. The prices of all species, except those for spruce, are taken from quarterly f. o. b. wholesale mill prices collected by the U. S. Forest Service, while those for spruce have been compiled from weekly quotations in the Boston wholesale market and published in the *Commercial Bulletin* of Boston. The quotations for Southern yellow pine are from mills in Alabama, Arkansas, Louisiana, Mississippi and Texas; Eastern white pine from mills in Michigan and Wisconsin; Eastern hemlock from mills in Michigan and Wisconsin; oak, plain, from mills in Arkansas, Kentucky, Louisiana, Mississippi, Tennessee, and West Virginia; gum from mills in Alabama, Arkansas, Louisiana, Mississippi, Missouri and Tennessee; chestnut from mills in Kentucky, North Carolina, Tennessee and West Virginia; yellow poplar from mills in Kentucky, North Carolina, Tennessee and West Virginia; hickory from mills in Tennessee; hard maple from mills in Michigan; ash from mills in Arkansas, Kentucky, Mississippi, Missouri, Tennessee and West Virginia; birch from mills in Wisconsin.

be doubted. Instability of prices leads to demoralization of the market, to a reduction in the volume of business and to the stimulation of the growing use of wood substitutes. With this in mind several sales organizations representing large lumber producers in the United States recently announced that their wholesale prices during the first six months of 1920 would be fixed at a point not exceeding the prices quoted on January 15, 1920. This, it is believed, will restore confidence in the buying public and will enable them to outline their buying policy on a definite maximum price.

The reasons for the phenomenal advance in prices in 1919 are not difficult to find, and may be attributed largely to depleted stocks at the mills, low production, serious transportation troubles and increased costs. Of these factors, the first three have been the most important, since the relative increase in price during the last few months has been greater than the increased cost of placing the product on the market.

STOCKS ON HAND, 1916-1919

The situation with reference to stocks on hand in the Southern pine region is shown in Fig. 4, which is based upon the lumber held by the average Southern pine mill for the years from 1916 to 1919 inclusive. From this it can be seen that, with minor exceptions, the stocks rapidly decreased from June, 1917, to September, 1919, since which time a slight accumulation has taken place, due chiefly to the inability of mills to move their product to market because of the lack of cars.

The continued demand for lumber

was such that on January 27, 1920, the secretary-manager of the Southern Pine Association reported that 146 mills had unfilled orders on hand for more than one-half of a billion board feet of lumber—about three and one-half million board feet per mill.

In the Douglas fir region the stocks at the mills steadily declined from January, 1919, when they were 83 per cent of normal, to August, when they were 56 per cent of normal. Since that time there has been a rapid accumulation of lumber, the December stock sheets showing the stocks to be 90 per cent of normal.³ This accumulation is due largely to a serious car shortage which has greatly reduced the volume of lumber which has moved eastward. The Douglas fir price level through the latter part of the year rose rapidly. One grade of Douglas fir (4/4 vertical grain car siding) reached \$100, the first time in the history of this species that such a high price has been obtained for any part of the general mill output.⁴

Stocks at hardwood mills showed a decline of 39 per cent from January 1, 1919, to November 1, 1919, the latest date for which records were available.⁵ There is every indication that the stocks at the end of the year were at a still lower level, with no immediate prospect of bringing them up to a point which would meet even the emergency requirements of the country.

A summary of the reports of eight regional lumber manufacturers associations which was compiled by the

³See Fig. 5.

⁴A Douglas fir price index is not included in Table I because of the lack of data.

⁵Based on a report of the American Hardwood Manufacturers' Association. See Fig. 6.

National Lumber Manufacturers Association, shows that during the year the reported cut was 10,417 millions of board feet, the shipments, 10,081 millions of board feet and the orders, 10,231 millions of board feet. The shipments were therefore 96.7 per cent and the orders 98.2 per cent of production. The industry as a whole, therefore has had but little opportunity to replenish the depleted stocks at the mill, and the country entered

the present year with a relatively low stock of lumber from which to draw. Since production for the last six months for the mills reporting to the National Association was approximately only 80 per cent of normal, the possibility of a price reduction for lumber is not encouraging.

This is especially true, since in many of the large consuming regions the available stocks of lumber at retail yards are at a minimum and badly

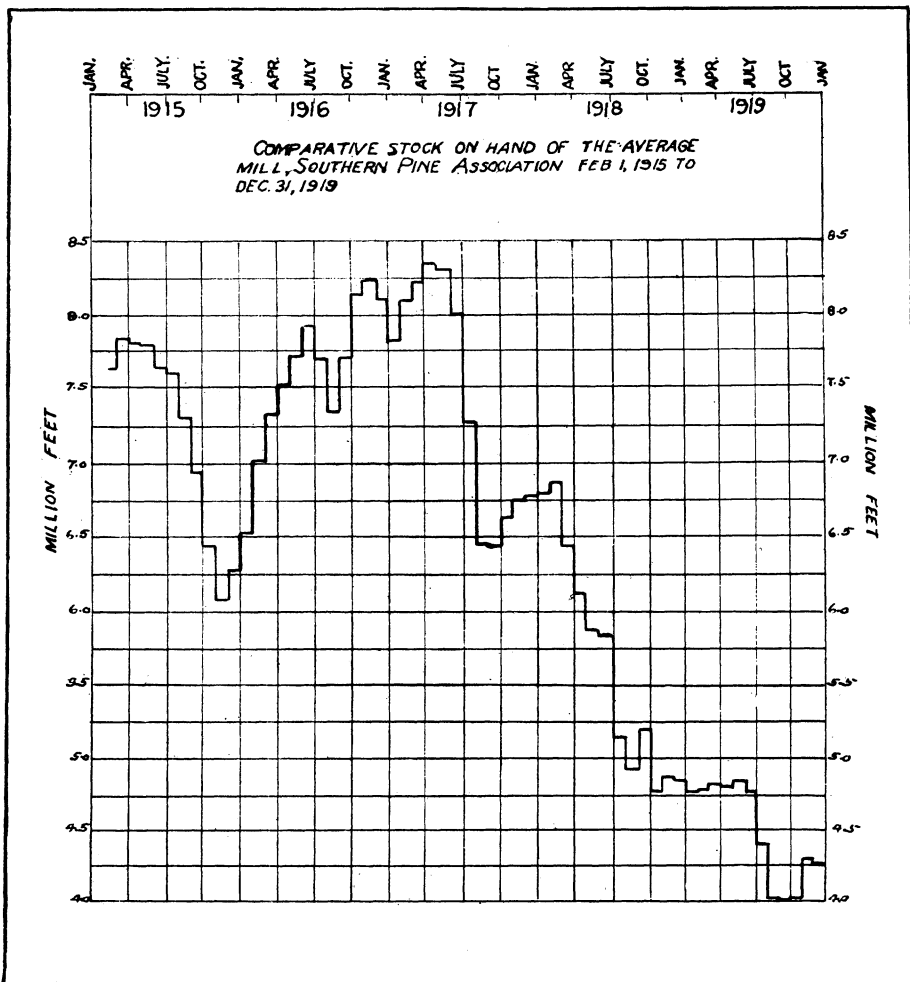


FIG. 4.—Stocks on hand at the average mill, as reported to the Southern Pine Association, February 1, 1915, to December 31, 1919.

broken, and if the prices hold to a reasonable level an unprecedented demand for lumber may be reported during the coming year.

Production in 1919

The reasons for low production in 1919 may be attributed chiefly to the scarcity and inefficiency of labor and the very unfavorable climatic conditions which prevailed during the latter part of the year.

Labor Shortage.—The labor situation in the Southern pine region well illustrates the conditions which the operators faced in practically every section of the country during the last year. Southern pine operators were confronted with an average labor shortage of 20 per cent due to the exodus of many workmen to urban centers. In July, 1914, it required 23.3 man hours to produce one thousand board feet of lumber, while in July, 1919, it required 37.5 man hours to accomplish the same result. The labor cost increased from \$6.01 per thousand board feet to \$13.50, or 125 per cent. Again in July, 1914, it required 134 men on the pay roll to maintain a full crew of 100 men per day, while in July, 1919, 153 men were carried on the pay roll to maintain a crew of the same size.⁶ If the producers met with no other obstacle, they could not have kept production at a level approaching normal.

Climatic Conditions.—Coupled with an unsatisfactory labor situation there were climatic conditions, especially in the South, which greatly hampered

logging operations during the latter part of the year. The logging conditions during the early part of 1919 were favorable, but during the fall and early winter, especially in October and November, the precipitation was several per cent above the average reported for many years, which so reduced the log input that a log shortage occurred which compelled many mills to run on a part-time schedule.

During the first eleven months of the year, 135 subscriber mills reporting to the Southern Pine Association showed a total loss of 80,213 hours, or approximately 60 working days each, 41,878 hours or 31 working days being due to a shortage of logs. On the basis of normal production, the loss of the above mentioned time represented a decrease in production for the 135 mills of nearly 600 million board feet.

The situation in the hardwood region was particularly trying since the winter production in 1918-19 was much below normal because the relatively light demand for hardwood lumber during the latter part of 1918 caused manufacturers to carry small stocks of logs. The revival of the hardwood trade during the early part of 1919 found the mills with a shortage of logs which greatly limited production. Summer logging was started on the usual scale but was hampered by rains in May and June so that the log output was not equal to the demand. Hardwood manufacturers purchased large quantities of logs from small operators and the serious car shortage which occurred from July to September curtailed the movement of these logs and thereby created an unexpected deficit in the supply of raw material at the mills.

⁶From a letter written by J. E. Rhodes, Secretary-Manager, Southern Pine Association, published in the *American Lumberman*, Chicago, February 28, 1920, p. 51.

As a consequence of the various combinations of circumstances, hardwood operators went into the winter of 1919-20 with the smallest log supply in recent years. This will mean a low lumber output, relatively speaking, since logging cannot reach normal before the late spring or early summer of 1920.

In the Northwest the chief factor which has influenced production has been the labor situation, while a car shortage has chiefly affected shipments. In this region production has not been hampered to the same extent as in the South, which is shown by the return of the mill stocks to approximately normal at the close of the year.

Since a large part of the lumber for the domestic trade moves from the

producer to the consumer by rail, the transportation situation has a marked influence on the price at which lumber is sold. In times when the demand for lumber is spirited, the failure of rail transportation to function normally may, and often does, create a marked scarcity of lumber in the larger markets of the country. This was the case during the past year.

From July to September Southern pine operators did not receive more than 60 per cent of their car requirements, and only about 75 per cent of their requirements during the last two months of the year. The west coast situation also was so unfavorable, that it was not possible to deliver lumber in the volume that the consumers demanded. The result has

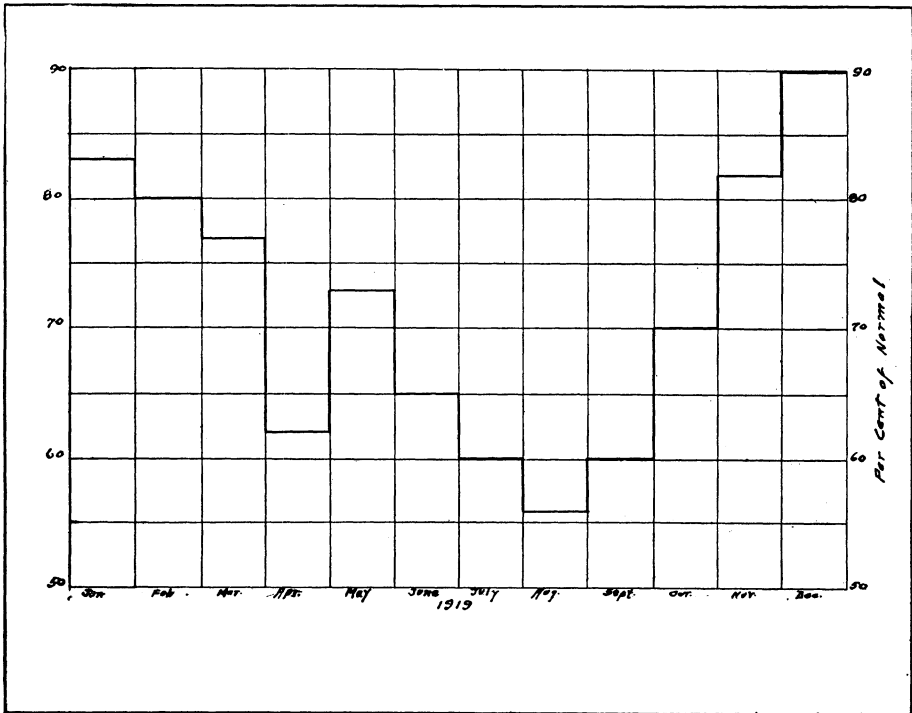


FIG. 5.—The per cent of normal stocks on hand at mills in the Northwest as reported to the West Coast Lumber Manufacturers' Association. January to December, 1919, inclusive.

been an uncontrolled market for such lumber as could be delivered.

Increasing costs of production have played only a minor part in the present price level, since the values at which lumber changes hands are determined chiefly by the competitive bidding of buyers to fill their most pressing needs.

THE FUTURE OF THE PRICE MOVEMENT

There are certain phases of the present lumber situation which furnish some basis for a reasonable prediction of the probable course which lumber prices will take during the course of the present year. Attention has been directed previously to the low stocks now held at the mills and to the sub-normal rate of production in the face of unprecedented demand. As far as we can now see there is no immediate prospect of a marked change in conditions affecting the output of the mills since there is little assurance that labor conditions will soon approach normal.

It is improbable that the lumber industry during 1920 can produce a greater amount of lumber than it did in 1918, approximately 33 billion feet, a quantity several billion feet below the production for a number of years previous.⁷ If this prediction is true, the lumber cut of the country will again prove inadequate to our immediate needs and a relative scarcity of lumber will continue to exist, provided our requirements are normal or nearly so.

Whether the demand will continue

as great as it has been during the last few months will depend, it is believed, on whether the prices of lumber can be held to a relatively stable basis. The demand for building materials will not continue unabated if prices tend to rise as they have during the last few months. The need for lumber is as great as ever but the high prices now prevailing already have had a tendency to limit speculative building operations to a minimum and any further advances will undoubtedly cause a cessation of all but the most urgent building needs.

Building Requirements for 1920.—The building requirements of the country were ably summarized by the Brookmire Economic Service a few weeks ago.⁸ In this statement it is pointed out that the average building program of the country calls for the annual expenditure of approximately \$700,000,000. Since January, 1919, 23 per cent of the contemplated construction has been for private building operations, both speculative and non-speculative; 15 per cent for the construction of apartments and like structures; and 62 per cent for structures such as theatres, churches, office buildings, factories, public buildings and similar projects.

The building statistics for some 105 cities in the United States for the last twelve years show that, with the exception of 1916, the building program has been below normal since 1913, touching the lowest point in 1918.⁹ In order to bring the building

⁷For a detailed statement of the lumber cut of the United States for each calendar year from 1913 to 1918 inclusive, see *Prices of Lumber*, by R. C. Bryant, War Industries Board Price Bulletin No. 43.

⁸The Building Outlook for 1920, by John C. Howell, *Southern Lumberman*, Nashville, December 20, 1919, p. 131.

⁹On January 1, 1919, the *American Architect* estimated that, due to decreased building operations, this country was short 700,000 dwellings.

program up to normal for this entire period the expenditures during 1920 must approximate \$2,500,000,000.

The restriction in building construction for housing purposes is well illustrated by conditions in three of the largest boroughs of Greater New York, namely, Manhattan, Brooklyn and the Bronx, which in 1916 spent \$76,000,000 for dwellings, an expenditure that did not even then fully meet the demand. During 1917 and 1918 the expenditure was approximately \$29,000,000 of which about \$10,000,000 was spent in 1918.

Although we have the immediate necessity for the greatest building program in the history of the country, it is exceedingly doubtful if sufficient capital can be secured to finance even

a reasonable proportion of it, since the present high price of building materials of all sorts and of labor will not in all cases permit the necessary returns on investments made in speculative building.

It is therefore probable, that during the coming year operations will be confined chiefly to necessary building operations. It is doubtful if even the normal program will be met, unless costs become more stable than they have been during the last few months. A great shortage of housing accommodations for our normal population, however, augurs well for a strong future demand for general building woods.

Prospective Demands.—What of other wood requirements? The furniture trade during 1919 reports that

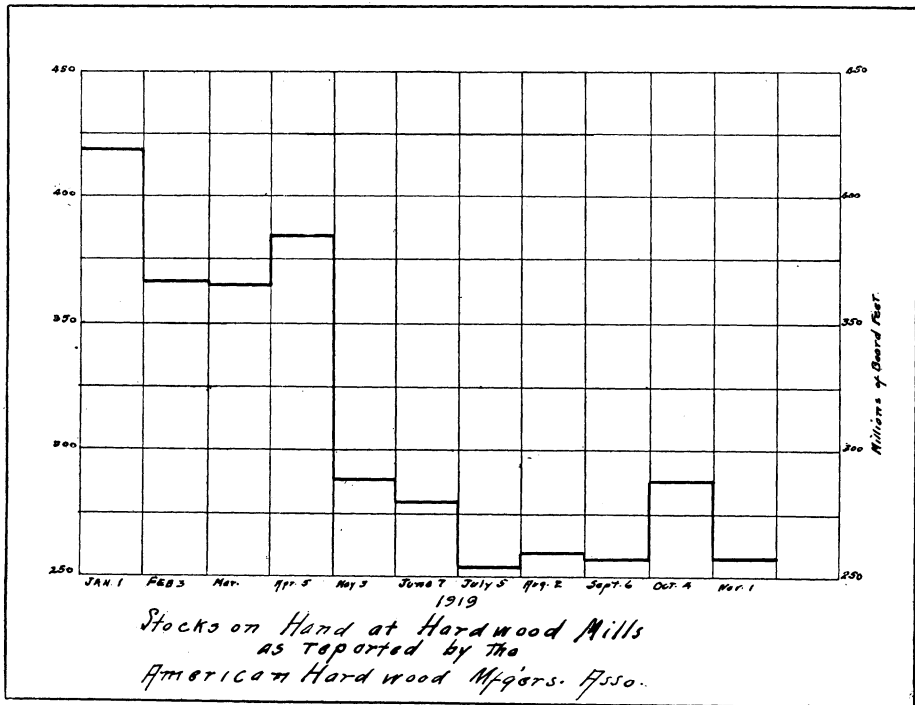


FIG. 6.—Stocks on hand at hardwood mills in the Southern and Eastern districts of the American Hardwood Manufacturers' Association, as reported to the above association. January 1, 1919, to November 1, 1919.

business exceeded expectations, the demand being for the better quality of stock. The industry now has on its books enough business to keep the plants running to capacity until early fall, with prospects of one of the most prosperous years in its history. There is therefore but a slight chance for a diminution in demand for raw material by the industry. Since the furniture trade normally consumes more than 900 million board feet of lumber annually, largely hardwoods, this means a sustained demand for this class of material.

The vehicle and agricultural trade which normally consumes more than one billion feet of lumber is also active and will probably demand a large proportion of its normal requirements both for softwoods and hardwoods.

During the last three years the purchase of lumber by the railroads has been relatively low, with the result that a vast amount of material will be required not only to meet the ordinary maintenance needs, but also to make the necessary improvements which have been deferred. There now exists a great scarcity of box and other types of cars, since the building of new cars has not kept pace with the increase in business. This is shown by the fact that during the last four years the freight business has increased 57 per cent, while the freight car increase has been only 5 per cent. Since car construction alone is reported to require about one and one-quarter billion feet of lumber annually, it is evident that the railroads must in the near future play a more important part in the lumber market than they have during the last few years.

We find in every branch of domestic

lumber consumption an indication of a large demand during the present year which points to an active market for the lumber output of the country.

Imports.—Previous to the war, we were importing, largely from Canada, approximately 1,200,000,000 board feet of lumber and logs (chiefly general purpose woods), 900,000,000 shingles and 565,000,000 laths. These imports, in so far as lumber was concerned, continued to come into this country during the entire war period and long have been recognized as one of our definite sources of supply.¹⁰ That any appreciable increase in our imports from Canada will take place in the future is not anticipated, since Canada faces industrial problems similar to our own, which hamper production. In addition, Great Britain is making greater demands on Canada's surplus lumber supply than she has in the past. There appears, therefore, but little chance for an augmented supply from this source.

In so far as the sources of foreign supply for general purpose woods are concerned, they may be regarded as negligible since such a trade was not built up in the past, and present and prospective economic conditions are not indicative of any such development for a great many years to come. The chief potential source, other than Canada, of imports of general purpose woods, is Mexico, which, because of the disturbed political conditions, holds forth no assurance of an early reestablishment of the lumber manufacturing projects which were destroyed during recent years.

¹⁰ Our imports for 1919 of lumber and logs was 1,241,301,000 M. bd. ft.; shingles 1,987,480 M. pieces; laths 802,651 M. pieces.

The chief forest producing regions of Europe, namely, Russia, Finland, Sweden, Norway, Austria and Poland, are of interest to producers in this country chiefly because of the competition which they offer to American woods in European markets, although it is true that one consignment of Polish oak recently reached this country due to the very high price at which the native oak is now selling in our domestic markets. That an active trade of any volume in Polish woods will be built up in this country in the future, however, is not to be expected.

Exports.—In 1913 we were exporting about 3,750,000,000 feet of logs and lumber to foreign countries, about 8.4 per cent of our cut for that year. Of this amount 79 per cent was composed of softwoods. During that year, Europe received 37 per cent of our forest exports, North America (chiefly Canada and Mexico) 30 per cent; and South America 16 per cent. The foreign lumber trade fell off very markedly during the war and in 1918 was only 35 per cent of the export lumber trade of 1913. The heaviest decrease in the lumber trade was with Europe.

Our European trade in forest products since the close of the war has not shown a marked increase because of the unprecedented domestic demand and the high price level, the unfavorable money exchange and the high shipping rates which have prevailed.¹¹ That there is an opportunity again to enter the European markets, should the domestic demand slacken, is undoubted, although excessive compe-

tition would be met from lumber originating in Scandinavia and Finland. However, this competition can undoubtedly be met by producers in the United States because of the increase in the cost of production in the European countries mentioned, due to the great wage increase and also to the adoption of an eight-hour law in Scandinavia.

A recent estimate places the annual post-war lumber needs of Europe for housing facilities, new construction and for repairs made necessary by the damage done by military operations, at seven billion board feet in excess of normal pre-war requirements, an amount twice as great as our maximum peace time exports.

While there is little chance of Europe being able to purchase such a large additional quantity of building material, there are indications that her purchases in the near future will exceed those made in pre-war years. In supplying these additional needs, the lumber producers in this country have open to them a larger field of export trade in Europe than they have ever had presented to them before, because only Russia, Finland and Sweden can largely increase their pre-war exports of wood products without greatly depleting their forest capital.

Russia, during 1920, as a source of forest products is regarded by English buyers as an almost negligible factor; Finland, because of her internal troubles and unfavorable rate of money exchange, is considered an uncertain element, in so far as lumber supply is concerned; while both Swedish and Norwegian lumber exports during 1919 were below normal, with but little

¹¹ During 1919 our exports of logs and lumber reached 1,247,801 M. bd. ft., about one-third of the 1913 exports.

promise of moving more than normal exports during 1920. In fact, Swedish reports state that the log input during the winter of 1919-20 will be below normal, although this has not been corroborated.

To sum up the situation as regards lumber prices. Indications point to the maintenance of a high relative price level in the future. So far the increase in the wholesale price of lumber has not been reflected to a marked degree in the appreciation of the value of the raw material, stumpage, because of the lack of labor to operate present mills to capacity. There is also the difficulty of securing machinery and supplies to equip new competitive manufacturing plants. It has been the history of the industry that only during comparatively short periods, however, does lumber manufacture yield a large profit, since it attracts new capital into the industry which creates additional competition for raw material, thus raising the price of the latter, and reducing the profits that are available to the manufacturer. Additional competition also tends to lower the price level because

of the keenly competitive character of lumber marketing. While the price level will undoubtedly fall during the course of the next year, it is doubted whether the industry will again ever face a period of low profits such as have overtaken it in the past. The supply of hardwoods is being rapidly depleted, while the end of the Southern pineries, as a vast producing center, is now in sight. Even today about 50 per cent of the output of the South is consumed locally, and this will rapidly increase with a decline in production.

Our lumber values are now approaching those of European countries and it is confidently expected that in the future we must pay a higher price than we have been accustomed to accept up to two years ago, unless we adopt adequate measures to meet the situation.

The sole remedy for averting a period of abnormally high prices for forest products, especially lumber, a few decades hence, has as its foundation stone the maintenance of a sustained yield in our forests, in other words, the practice of forestry.